Reference to Blair's mean free-air temperatures [14] shows that the vertical temperature gradient is steeper during the spring than during the fall. In May, for example, the fall in temperature in 5 kilometers is 32 degrees (C.); in September it is 26 degrees. In conformity with the above in the spring nocturnal radiation is greater than in the fall, the intensity of solar radiation is a little greater, and so is the diurnal range of temperature.

Temperature inversions like those shown in figure 5, are not rare. They may occur on a plain where there is no wind movement to carry away the lower cooled air layer and mix it with warmer air. They are to be expected in deep valleys unless the valley grade is such that the cold air will flow out rapidly. The so-called thermal belts, or belts on the slopes that are free from injurious frosts at critical times, are due to the fact that as soon as the surface air layer on the slope becomes cooled there is a convective exchange between it and warmer adjacent air that may have been on the same level, but was farther removed from the slope surface.[15]

On the slope of Peak Knob frosts injurious to fruit are unknown between the 200-meters and the 400-meters levels, while fruit can not be raised in the valley at the foot of the slope.

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[14] *Blair, Wm. R.* Op. cit., p. 179, fig. 1.

[15] *Marvin, Chas. F.* Air drainage explained. MONTHLY WEATHER REVIEW, October, 1914, **42**: 583–585.

MOLECULAR SCATTERING OF LIGHT.

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In a paper communicated to the Astronomical Society of France (L'Astronomie, January), Prof. *Ch. Fabry* gives an account of Lord Rayleigh's explanation of the blue coloration of the sky, and announces that the theory has been experimentally verified in his laboratory at Marseilles by M. Cabannes. Prof. Fabry suggests that several hitherto mysterious phenomena in the heavens may possibly be explained as effects of this scattering of light by gaseous molecules. In the case of the solar corona, for example, the portion of the luminosity which gives a continuous spectrum does not necessarily imply the presence of solid or liquid particles, but may be attributed to the diffusion of photospheric light by molecules of truly gaseous coronal matter. A density of only 1/1,000,000,000 part of that of atmospheric air would suffice to account for the observed intensity of the coronal light, and the polarization of the light would be simply explained, as in the case of the light of the sky. A part of the luminosity of the tails of comets may be explained in a similar manner, and in this case the density must be less than one milligram per 1,000 cubic meters, as otherwise the luminosity would be greater than any which has ever been observed. Other possible effects of molecular scattering are also suggested. It may be added that Prof. R. J. Strutt has also succeeded in observing the scattering of light by dust-free air in a laboratory experiment with artificial illumination (Nature, Oct., 1917).[1]

[1] Reprinted in this REVIEW, October, 1917, p. 485.